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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,825	04/12/2001	Kazunori Kaneda	Q64042	1925

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,825

Applicant(s)

KANEDA, KAZUNORI

Examiner

Justin R Fischer

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Claim 7 is cancelled per Amendment A on May 1, 2003.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuhara (JP 2000-17115, of record). As described in the Abstract, Fukuhara discloses a pneumatic tire construction incorporating a tire reinforcing member or composite formed of a coating rubber composition and steel reinforcing elements (steel ply, such as a belt), wherein said coating rubber composition includes a hydrotalcite mineral having the claimed structure ("x" is between 0.3 and 0.5 and "m" is between 0 and 5). Fukuhara suggests that improved adhesion between said coating rubber composition and steel reinforcing elements is realized due to the incorporation of the hydrotalcite mineral.

Regarding claim 3, Fukuhara teaches the use of between 0.5 and 20 phr of said hydrotalcite mineral, which incorporates nearly the entire range of the claimed invention.

With respect to claims 10 and 12, as previously stated, Fukuhara is directed to the use of the reinforcing member or composite in tires, such as belt plies (Abstract and Paragraph 13 of translation).

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4. Claim 2, 5, 11, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (US 5,226,987, newly cited). As best depicted in Figures 1 and 2, Matsumoto discloses a pneumatic tire construction incorporating (a) at least one composite layer 2 formed of a coating rubber composition and steel cords and (b) at least one squeegee rubber or rubber reinforcing layer 3 comprising a rubber composition which adjoins to said composite layer, wherein said rubber reinforcing layer contains silica, which is a basic inorganic filler (Column 2, Lines 20-30 and Column 3, Lines 60-68).

With respect to claim 5, Matsumoto teaches the use of between 5 and 40 phr of silica, which incorporates nearly the entire range of the claimed invention.

Regarding claims 11, 13, and 15, the composite layer 2 of Matsumoto is a steel-cord reinforcing belt layer used in a heavy-duty tire construction.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara. As set forth in Paragraph 3 above, Fukuhara discloses the use of a hydrotalcite mineral in a steel cord reinforced tire member, such as a belt, in order to improve adhesion between the coating rubber composition and the steel cords. While Fukuhara is completely silent with respect to a specific type of tire, one of ordinary skill

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in the art at the time of the invention would have found it obvious to employ the tire reinforcing member of Fukuhara in a wide variety of tires, including heavy-duty tires, where improved adhesion between coating rubber compositions and steel cords is desired. In particular, it is well known in the tire industry that a large portion of heavy-duty tires contain steel reinforcing composites, further suggesting that one of ordinary skill in the art at the time of the invention would have found it obvious to include the tire reinforcing member of Fukuhara in a heavy-duty tire construction.

7. Claim 2, 5, 8, 9, 11, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (US 4,714,734, of record). As best depicted in Figure 1, Hashimoto discloses a pneumatic tire construction incorporating (a) at least one composite layer or carcass ply 7 formed of a coating rubber composition and reinforcing cords and (b) at least one squeegee rubber or rubber reinforcing layer S comprising a rubber composition which adjoins to said composite layer, wherein said rubber reinforcing layer contains an inorganic filler, such as hydrotalcite (Column 10, Lines 25-53 and Column 13, Lines 45-60). In describing the carcass ply 7, Hashimoto only states that the carcass is composed of a reinforced cord and has an angle of between 70 and 90 degrees with respect to the equatorial plane of the tire (approximately radial)- the reference fails to describe the reinforcing cords as being metal and/or textile. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to form the carcass of Hashimoto with steel reinforcing cords since these cords are extensively used in a wide variety of tire carcass plies due to their high strength characteristics, it being emphasized that the critical feature of Hashimoto is not the

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material used as the carcass reinforcement cord (as evidence by the complete silence regarding the material) but rather a unique rubber composition S that provides good strength, good resistance to hot water, good thermal conductivity, and good processability.

With respect to claim 5, one of ordinary skill in the art at the time of the invention would have recognized the broad range of the claimed invention as defining well known quantities of inorganic fillers used in tire rubber compositions. It is noted that carbon black is the primary filler in the rubber composition of Hashimoto and is included in a preferred amount between 2 and 100 phr, such that one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the inorganic filler (secondary filler) to be included in a smaller amount and within the broad range of 0.1 and 20 phr.

Regarding claim 8, as stated above, Hashimoto suggests the use of hydrotalcite as the inorganic filler.

With respect to claim 9, it is evident from Figure 1 of Hashimoto that the squeegee rubber or rubber layer S is the outermost tire sidewall layer.

Regarding claims 11, 13, and 15, as set forth above, the tire reinforcing member of Hashimoto is a tire carcass ply. Furthermore, while Hashimoto fails to identify a specific tire, one of ordinary skill in the art at the time of the invention would have found it obvious to use the tire design of Hashimoto in the manufacture of heavy-duty tires, it being recognized that the properties of good strength and good processability are desired in a wide variety of tires, including heavy-duty tires.

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8. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto as applied in the rejection of claim 2 above and further in view of Nguyen (US 6,028,144, of record). As previously stated, Hashimoto discloses a pneumatic tire construction incorporating (i) a composite layer (carcass ply) having a coating rubber composition and (ii) a squeegee rubber S comprising a rubber composition formed with an inorganic filler. In describing the carcass, though, Hashimoto is silent as to the coating rubber composition and thus necessarily fails to suggest the inclusion of an inorganic filler. In any event, inorganic fillers represent well known additives that are extensively used in the reinforcement of a wide variety of tire rubber components, including carcass plies, and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to include an inorganic filler in the carcass coating composition of Hashimoto. It is further noted that a large number of well-known additives, including fillers, oils, plasticizers, and antioxidants are, included in tire rubber compositions- they represent fundamental components of tire rubber compositions. Thus, the inclusion of an inorganic filler in the coating rubber composition of Hashimoto would have been readily appreciated by one of ordinary skill in the art at the time of the invention.

Regarding the claimed ranges for the inorganic filler, they define broad ranges that are consistent with the well-known use of inorganic fillers in each tire component. It is noted that applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed amount of inorganic filler. Also, regarding Table 2, these results are not found to be persuasive since the only example in which an

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inorganic filler is used in both the coating composition and the squeegee rubber is Example 5; however the resistance to adhesion loss is the same in Example 5 and Example 6, which only contains an inorganic filler in the coating rubber composition. Thus, the data fails to suggest a criticality for the inclusion of an inorganic filler in both the coating rubber composition and the squeegee rubber.

Response to Arguments

9. Applicant's arguments with respect to claims 1-6 and 8-15 have been considered but are moot in view of the new ground(s) of rejection. In view of applicant's amendments, the rejections involving Leo, Itoh, and Nguyen have been withdrawn from consideration. However, Fukuhara, Matsumoto, and Hashimoto have been newly applied as set forth in the rejections above.

With respect to the results of Table 2, as previously set forth in Paper Number 4, Page 9, these results are not found to conclusive evidence of "unexpected results" since the quantity of magnesium oxide and hydrotalcite is varied between rubber compositions and as such, it is unclear if the realized benefits should be attributed to the quantity of the inorganic filler or the specific inorganic filler. This point is especially true in light of the comparisons of Examples 1 and 4, wherein the composition having magnesium oxide (Example 4) provides improved resistance to adhesion loss as compared to the composition having hydrotalcite (Example 1). The Examples 1-4 suggest the relevant factor in determining the degree of resistance to adhesion loss is the amount of inorganic filler and not the inorganic filler (larger amount of inorganic filler

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leads to greater resistance to adhesion loss: Example 3> Example 2> Example 4> Example 1).

Regarding the declaration submitted on May 1, 2003, applicant has enclosed a series of experimental tests in which only a tire reinforcing member (cord reinforced ply without squeegee rubber) is included. Thus, these results are commensurate in scope with claims 1, 3, 10, 12, and 14. While the results indicate that hydrotalcite provides improved resistance to adhesion loss, as compared to magnesium oxide, the results are not "unexpected" in view of the disclosure of Fukuhara, in which hydrotalcite is specifically included in a coating rubber composition of a steel cord reinforced tire member to improve adhesion.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

July 11, 2003


JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300